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Influence of storage conditions on polyphenolic, terpenoids and sensory profile from *Cymbopogon citratus* infusions

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Cymbopogon citratus, commonly known as lemongrass, is a tropical plant from Asia. The dried leaves can be brewed into an infusion and benefits, like cytoprotective, antioxidant and anti-inflammatory properties have been described.

The present work aims to evaluate the characteristics of the lots of aromatic plants throughout the storage using mainly chromatographic and sensory analysis in order to define a period of consumption preference. The plants were packed and stored in a can under forced conditions for 30 days. To evaluate the individual polyphenols and terpenoids compounds a HPLC-DAD and GC-MS analysis were performed, respectively. Additionally, antioxidant capacity, total phenolic compounds and sensory analysis were performed. For the sensory analysis, a panel of 60 consumers evaluated the samples using a 9-point hedonic scale. A trained panel, with 10 judges, evaluated the infusions sensory profile, through a QDA method.

From the results it was possible to verify that only the polyphenol profile presented significant changes. The main individual polyphenolic compounds identified were the chlorogenic, caffeic and rosmarinic acids that decreased over time together with antioxidant capacity results. Several aromatic compounds were found, such as citral, 6-methyl-6heptone-2-one, linalool, nerol, geraniol, eucalyptol, but no significant changes were observed throughout storage time.

Based on the overall liking, no significant differences were found over time. Also, in the QDA analysis no significant differences were found between samples for the attributes evaluated, confirming the correlation with the stable aromatic compounds.

In conclusion, despite the decrease in the phenolic profile the maintenance of antioxidant activity is justified by the stability of the aromatic profile, which also has an antioxidant potential, during storage time. Furthermore, the storage time didn't have a perceptible effect on the infusions sensory profile and consumers liking.

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